

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 10/656,879

**REMARKS**

Upon entry of this Amendment, claims 1-8 are all the claims pending in the application. Claims 5-8 have been added. Claims 1, 2 and 4 presently stand rejected. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form (and if the double patenting rejection is overcome).

The Abstract of the Disclosure is objected to by the Examiner. In response, Applicant has amended the abstract. Withdrawal of the objection is requested.

Claim 2 is objected to because of informalities. Applicant has amended claim 2 to provide adequate antecedent bases for all features. Withdrawal of the objection to claim 2 is kindly requested.

Claims 1, 2 and 4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Galambos (Crystal Growth article).

Claims 1 and 4 are further rejected under 35 U.S.C. § 102(b) as being anticipated by Phillips (USP 3,933,504).

Claim 1 is further rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of USP 6,373,806.

For the reasons set forth below, Applicant respectfully traverses the rejections and requests favorable disposition of the application.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 10/656,879

*Argument*

Claims 1-4 have been amended. Support for the amendments is located at lines 2-6 of page 10 and lines 3-23 of page 13, for example. Further support appears at line 23 of page 22 through line 20 of page 23 in the specification.

The hologram recording medium in accordance with the invention disclosed and claimed comprises a crystal body including a lithium niobate single crystal or a lithium tantalate single crystal which is doped with only Mn. In other word, the crystal body includes only Mn as a dopant, and does not contain other elements as a dopant.

Galambos, in comparison, discloses a lithium niobate single crystal which includes Ce and Mn as a dopant (see tablet, and section 3 in p.230). At least because Galambos does not teach, or even suggest, having only Mn as a dopant, claims 1-8 are all patentable over Galambos.

Phillips discloses a recording medium comprising a lithium niobate single crystal which includes Fe and Mn as a dopant (see lines 29-52, col.2).

Accordingly, for at least reasons analogous to those set forth above in regard to Galambos, the hologram recording medium of claimed invention is patentable over Phillips.

Furthermore, Phillips discloses a recording medium comprising a lithium niobate single crystal which is used for photochromic hologram recording. In photochromic hologram recording, the holographic information is recorded by irradiating visible light to the medium after exposing it to UV light. The recording medium of the present invention, however, is used for two-color hologram recording. In two-color hologram recording, the holographic information is recorded by irradiating visible light to the medium while exposing it to UV light. The difference in the method of recording depends on the composition of the recording medium.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 10/656,879

Additionally, Phillips does not disclose a lithium niobate single crystal having a substantially stoichiometric composition. Phillips discloses a lithium niobate single crystal that is prepared by a Czochralski crystal growth technique and is grown from a melt of approximately equal amounts of lithium carbonate and niobium pentoxide (see lines 47-55, col. 2.). According to this disclosure, it is suggested that the obtained lithium niobate single crystal has a congruent composition. According to the hologram recording medium of the present invention, however, the hologram recording medium comprises a lithium niobate single crystal or a lithium tantalate single crystal which has a substantially stoichiometric composition. For this additional reason claims 1-8 are patentable over Phillips.

In regard to the double-patenting rejection. Kitamura discloses a lithium niobate single crystal which includes a rare-earth element (Tb, for example) as a dopant (see claim 5, from which claim 6 depends, and lines 10-30, col. 5).

A hologram recording medium according to the claimed invention, however, comprises a lithium niobate single crystal or a lithium tantalate single crystal which is doped with only Mn in the range from 1 wt ppm to 100 wt ppm. The double-patenting rejection is, thus, obviated because constitution with the present invention is different from cited reference.

***Patentability of New Claims***

For additional claim coverage merited by the scope of the invention, Applicant has added new claims 5-8. Applicant submits that the prior art does not disclose, teach, or otherwise suggest the combination of features contained therein.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 10/656,879

*Conclusion*

In view of the foregoing remarks, the application is believed to be in form for immediate allowance with claims **1-8**, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to **contact the undersigned** at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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